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广西田阳晚始新世古灵猫科化石[1)]

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摘要：记述了在广西省田阳县晚始新世公康组中发现的一新的古灵猫科化石——稀少东方鼬（*Orientictis spanios* gen. et sp. nov.）。新属与科中其他属不同在于 M1 呈三角形，不对称，后壁明显短于前壁并在中部向前凹入。

关键词：广西田阳，晚始新世，古灵猫科
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本文记述的标本是中科院古脊椎所一支野外队在20世纪80年代所采，由于种种原因，加上对比难度大，研究工作一直拖到现在。最近研究表明它不仅是我国很少发现的古灵猫科化石，而且它可能是古灵猫科的最晚代表。

食肉目 Carnivora Bowdich, 1821

古灵猫科 Viverravidae Wortman et Matthew, 1899

东方鼬属（新属）*Orientictis* gen. nov.

属型种 稀少东方鼬（*Orientictis spanios* sp. nov.）。

包括种 仅一属型种。

已知分布 晚始新世，中国广西。

特征 同属型种。

词义 orient，东方，指化石发现在亚洲；ictis，希腊文“貂”、“鼬”，食肉类常用属名后缀。

稀少东方鼬（新属新种）*Orientictis spanios* gen. et sp. nov.

（图1）

正型标本 一右上颌骨断块具 M1，及齿冠完全破碎的 P4 和 M2（V 13787）。

归入标本 一左下颌骨带 p2 和 p4、齿冠破碎的 p3 和下犬齿，及 p1 的齿槽（V 13788）。

产地及层位 田阳县城北东 5 km 公路北侧 300 m（水渠边），晚始新世公康组下部。

特征 与古灵猫科中其他属不同在于 M1 为三角形，前、后翼不对称，后壁长度明显短于前壁并在中部显著向前凹入，前附尖尤为向前外突出。

词义 span，拉丁文“稀少”之意，表明该种化石很难得被发现。

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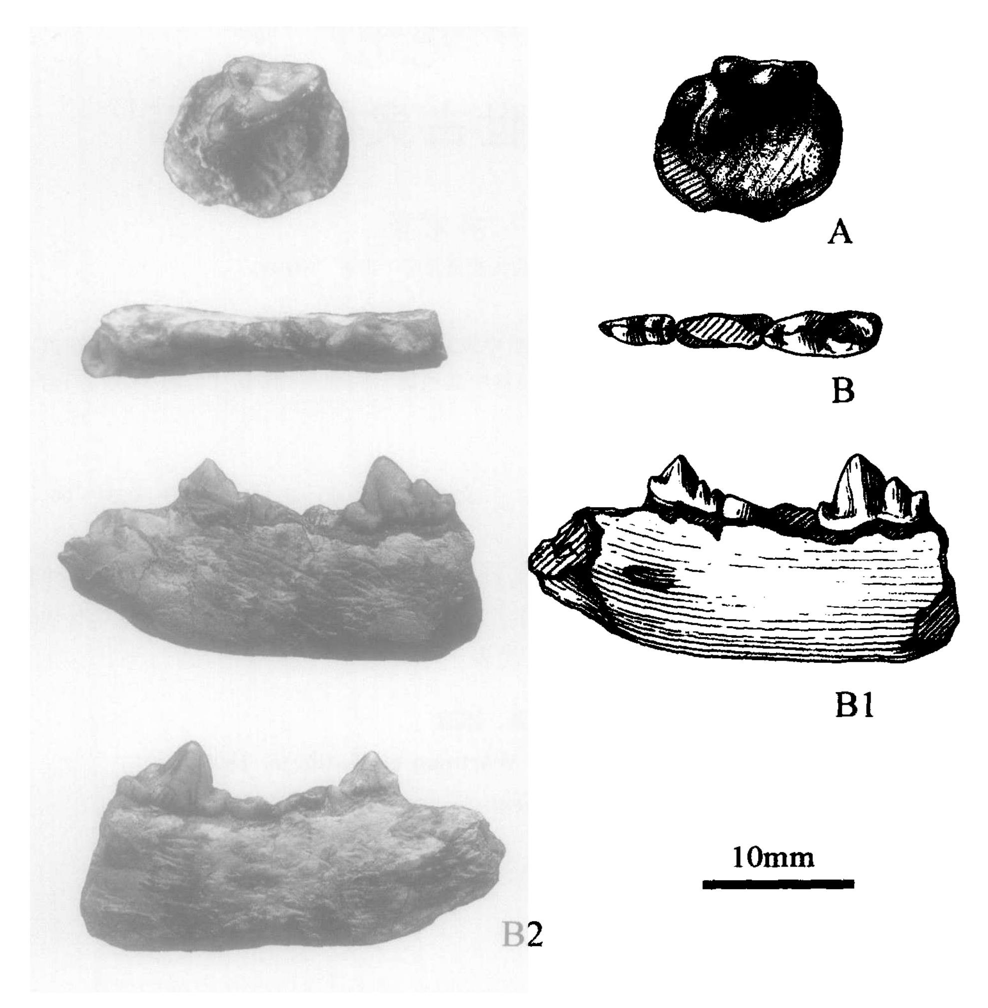


图 1 稀少东方鼬(新属新种)的上、下颌骨

Fig.1 Upper and lower jaws of *Orientictis spanios* gen. et sp. nov.

A. 右上颌骨附 M1 及齿冠完全破碎的 P4 和 M2 (V 13787),冠面观 Right upper jaw with M1, completely broken P4 and M2 (V 13787), crown view; B. 左下颌骨 (V 13788)附颊齿 p2 和 p4,及齿冠破碎的 p3 和下犬齿,冠面观 left lower jaw with p2 and p4, broken c1 and p3, crown view, B1. 唇面观 labial view; B2. 舌面观 lingual view

描述 正型标本上虽未保存上前臼齿,但仍可看出上臼齿的外缘明显地斜向后内方,亦即臼齿和前臼齿外缘连线的夹角较小。M1 呈斜三角形或呈以后附尖为顶、前壁为底的矮等腰三角形,后壁明显短于前壁,两者在舌侧相连。前尖大而突出,后尖较小,两尖均呈扁锥状,之间以浅沟相隔。原尖位于牙齿后内侧,原尖前、后脊较低但清楚。原尖前脊与弱的前小尖相连并延伸至前附尖。原尖后脊似与后附尖相接但在接近后尖基部变低并向前凹入。前附尖向前向外侧突出。无后小尖。后附尖小而不明显,位于后尖的后外基部。外齿带呈低脊状,与原尖前、后脊一起包裹着牙齿。牙齿长(外壁)6.4 mm,前、后壁宽分别为 7.9 mm 和 5.8 mm。

M2 齿冠已破碎。从残留部分看,小,似呈横宽的椭圆形,前壁较平直,后壁稍圆凸。其长约为M1长度之半,其宽大致相当M1后壁的宽度。P4无法看出其特征。

下颌骨比较粗壮。p2之下颌骨体唇、舌面深分别为9.4和9.7 mm,而向后变化不大,p4之下唇、舌面深分别为9.0和9.5 mm。下颌联合后部止于p2前部下方。颏孔呈椭圆形,较大,位于p1和p2之间骨体中部。犬齿齿尖已折断,断面近圆形,前后向稍长,较粗壮。p1单根,齿槽呈椭圆形,前后向长。p2到p4逐渐增大,紧密排列无齿隙,双齿根。p2冠面近长方形,前壁略尖,长远大于宽。下原尖高大,三角锥状。下前尖低小,下次尖在下原尖之后呈突起状,仅以极浅的沟相隔。上述3尖在一条直线上,几与牙齿长轴平行。无下后尖。跟座上其他尖分化不显。下后边脊将跟座围成一小而浅的盆。p3齿冠已破碎,但仍可看出跟盆向内侧开口,比在p2中大。p4与p2相似,但下原尖与下前尖和下次尖之间的界限清楚,之间的沟较深,从侧面看3尖呈笔架状,不过下前尖和下次尖比在p2中位置明显靠外。下次尖大,与下次小尖间裂凹深,下内尖小,跟座盆形。测量见表1。

表1 稀少东方鼬(新属新种)的下犬齿和下前臼齿(V 13788)测量

Table Measurements of anterior lower teeth (V 13788) of *Orientictis spanios* gen. et sp.nov.

	c1	p1	p2	p3	p4
长 (L)	5.2	?	4.7	6.4*	7.3
宽 (W)	4.0	?	1.9	2.4*	3.2

* 近似值 approximate value.

比较和讨论 广西的标本虽未保存裂齿,但已知牙齿为肉食性的尖形齿,下前臼齿的三角座与跟座有一定的高差,与食肉类(Carnivora)和古肉食类(Creodonta)的相应牙齿很相像,但究竟是哪类动物,很难确定。

记述的标本,下颌骨仅保存下前臼齿部分,故哪个下臼齿是裂齿和有无m3很难判断。保存的上颊齿的归属问题,也颇费一番周折。食肉动物的上颌骨在上前臼齿与上臼齿之间最向外凸,即上颊齿外缘连线的转折点在P4和M1之间,前臼齿的向后外方伸,臼齿的转向后内方。从广西的上颌骨看,保存的牙齿与残留的前面的牙齿之间外侧颌骨最向外凸,说明保存的牙齿是M1或是P4。我们从以下几方面认定保存的牙齿是右M1:1)牙齿有明显的分开的前、后尖;2)原尖有发育的原尖前脊和原尖后脊;3)靠近保存牙齿的小的破碎牙齿呈横宽的椭圆形,不像肉食类的上前臼齿,且远离保存牙齿的一边似乎是颌骨,说明该齿槽所代表的是最后一个上臼齿,即M2。这样,该标本就无M3。根据上述分析,仅有两个上臼齿且都不是裂齿,就排除了将它归入古肉食类的可能性。这块上颌骨应归入食肉目。早期的食肉类为古灵猫科(Viverravidae)和细齿兽科(Miacidae),它们的主要区别之一是前者上、下臼齿为两个,而后者为3个(郑家坚等,1975; Gingerich and Winkler, 1985; Fox and Youzwyshyn, 1994;黄学诗等,1999)。广西的标本无M3,故不可能是细齿兽科的成员,应是古灵猫科分子。

根据化石记录,古灵猫科是食肉类中最古老的类群,可能从早古新世出现,延续到始新世末,大部分属种发现在北美中古新世地层中。Gingerich和Winkler (1985)认为这个科包括下列各属—— *Viverravus*(北美,晚古新世—中始新世;欧洲,早—晚始新世), *Simpson-*

ictis(北美,中古新世),*Ictidopappus*(北美,中古新世),*Bryanictis*(北美,中古新世),*Intyrictis*(北美,中古新世),*Didymictis*(北美,中古新世—中始新世;欧洲,早始新世),*Protictis*(北美,中古新世—中始新世),*Raphictis*(北美,晚古新世)和 *Pappictidops*(亚洲,中古新世)等。在 McKenna 和 Bell(1997)的分类中,古灵猫科增加了 *Quercygale*(欧洲,中—晚始新世),*Simamphicyon*(欧洲,中—晚始新世),*Tapocyon*(北美,中始新世),*Plesiomiacis*(北美,中始新世)和 *Pristinictis*(北美,晚古新世)属。而 *Bryanictis* 和 *Intyrictis* 被归入 *Protictis* 属。当然,在分类上还有其他不同观点(Flynn and Galiano, 1982 等)。

我们可资对比的材料,主要是 M1 和 p4,与上述各属相应牙齿对比,均有一定差别。如 *Bryanictis* 的上臼齿大,呈矩形,具清楚的后小尖,M1 有明显的内齿带。而广西的 M1 呈三角形,无内齿带和后小尖。*Intyrictis* 的 p4 具下后尖,广西的 p4 无下后尖。*Ictidopappus* 的下前臼齿退化,小,冠面呈简单的三角形,而 V 13788 的下前臼齿近矩形。它的 M1 后部和 M2 不如我们的退化。*Simpsonictis* 的 p4 冠面呈三角形,前窄后宽(Gingerich and Winkler, 1985)。它的 p3 和 p4 相对窄而高,具高而发育的下前尖(前基尖,MacIntyre, 1962)。*Raphictis* 的 p4 窄,无盆形跟座。*Didymictis* 的 M1 具对称的原尖前翼和后翼(Matthew, 1937, p.101)。它和 *Quercygale* 一样上臼齿具发育的齿带和小尖(邱占祥、李传夔,1977)。*Viverravus* 的 M1 具次尖。*Pristinictis* 的 M1 具大的柱尖和发育的前、后小尖。上述都是与我们标本不同的特点。*Protictis* 的 p4 宽度中等,具一小的下前尖、大的下原尖和小的下次尖,无下后尖,及稍呈盆形的跟座。上臼齿宽比长大得多,后尖退化等特点与我们的标本相似,但它的上臼齿有发育的齿带。广西的 M1 呈三角形,前、后翼不对称,后壁短且在中部向前凹入是不同于包括 *Protictis* 在内的所有古灵猫的特点。产自我国安徽和广东中古新世的 *Pappictidops* 的 M1 的后半部显著收缩,前尖大于后尖,无中央脊,两尖仅在基部相连(邱占祥、李传夔,1977),与我们的 M1 相似,但广西的 M1 前、后尖不呈锥状,而呈前后向长的扁锥状,牙齿后壁中部明显向前凹入,个体也大得多。它的 p4 盆形跟座较宽,而不像 *Pappictidops* 那样呈纵脊状的很窄的跟座(王伴月,1978)。

从上述比较看,广西的标本可能代表一新的古灵猫,我们将它命名为稀少东方鼬(*Orientictis spanios* gen. et sp. nov.)。

稀少东方鼬化石发现在广西公康组中。公康组为汤英俊等(1974)所建,当时认为其时代为晚始新世—渐新世。除东方鼬外,动物群共生成员有类似 *Anthracotherium* 的东方石炭兽以及两栖犀、裂爪兽、印度鼷鹿等,其特点类似缅甸的邦唐组(Pondaung Fm),所以公康组的时代应是晚始新世,东方鼬是古灵猫科的最晚代表之一。从特征上看它也是这个科中最特化的一个属。

我国古新世发现的祖鼬(*Pappictidops*)的 M2 十分退化,东方鼬的 M2 也特别小。前者的 M1 的后半部显著退缩,如果后壁中部向前凹入就成后者的模样了。祖鼬 p4 的跟座很窄,呈纵脊状,一般来说这是一种原始特征,如果随着时间的推移,很可能进化成像稀少东方鼬那样的盆形跟座。这说明祖鼬可能是东方鼬的祖先类型,后者是由前者进化而来,只可惜目前还缺少中间环节的证据。

致谢 笔者感谢沈文龙先生为本文绘制精美的素描图。

A NEW VIVERRAVID (MAMMALIA, CARNIVORA) FROM THE LATE EOCENE OF TIANYANG, GUANGXI

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Key words Tianyang, Guangxi, Late Eocene, Viverravid

Summary

The present paper deals with a new viverravid found from the Late Eocene Gongkang Formation of Guangxi Province. The new form is a specialized taxon and may be the latest one of the family.

Carnivora Bowdich, 1821

Viverravidae Wortman et Matthew, 1899

***Orientictis* gen. nov.**

Etymology Orient, Latin "east", means fossil was found in Asia; iktis, Greek noun (Feminine), "marten", "weasel", a common suffix for carnivoran generic names.

Type and only species *Orientictis spanios* sp. nov.

Known distribution Late Eocene, China.

Diagnosis As for the type and only species.

***Orientictis spanios* sp. nov.**

(Fig.1)

Type A fragmentary upper jaw with M1, and completely broken P4 and M2 (V 13787).

Referred specimen A left dentary with alveolus for p1, broken c1 and p3, intact crowns of p2 and p4 (V 13788).

Locality and horizon About 5 km Northeastern Tianyang County Town, Guangxi Province; Late Eocene Gongkang Formation.

Diagnosis A taxon differs from the others of Viverravidae in having triangular M1 with the posterior wall curving forward at middle and much shorter than the anterior one.

Etymology Span, Latin "rare", in reference to this kind of fossil that was seldom found.

Description The crown of M1 is basically triangular in outline, with its posterior side much shorter than the anterior one and the two sides converging to meet lingually. The paracone is large while the metacone is small, with a shallow groove in between. The protocone situates at posterointernal side of the tooth. Both the preprotoloph and postprotoloph are low but distinct, the former extends to the parastyle through the small paraconule, and the latter connects the metastyle but curves forward at middle (near the metacone). The parastyle is large on the anteroexternal corner of the tooth, whereas the metastyle is very small. There is no metaconule. The external cingulum is low, surrounding the tooth together with the pre- and postprotolophs. The length along the external wall of the tooth is 6.4 mm, the width of the anterior and posterior walls is 7.9 and 5.8 mm, respectively.

M2 is elliptical in shape, wider than long seeing from the remaining part. Nothing can be seen about P4.

The horizontal ramus is robust. The posterior margin of symphysis reaches the anterior side of p2. The mental foramen is elliptical in shape, situated at middle part of the mandible under p1 and p2. c1 is robust though damaged, the section of which is somewhat rounded in outline. p1 is single-rooted. The lower premolars increase in size and are double-rooted from p2 to p4. p2 is nearly rectangular in shape, much longer than wide. The protoconid is large and high, whereas the

paraconid is very small. The hypoconid is tubercle-like behind the protoconid. Above three cusps are in the same line paralleling with the longitudinal axis of the tooth. The talonid is small but basin-like. p3 is broken but larger than p2 in size seeing from the remaining part. p4 resembles p2 morphologically. Both paraconid and hypoconid are larger and more externally situated than those in p2, and separated from the protoconid by carnassiform notch. There is no metaconid as in p2. The talonid is basin-like with small entoconid and hypoconulid.

Remarks The teeth studied are sectorial and the talonid is lower than the trigonid in the lower premolars, indicating that these teeth represent carnivorous animal. Its M1 is not carnassial tooth and there is no M3 on the upper jaw, showing the Guangxi material belongs to Viverravidae.

The Viverravidae is an archaic mammalian group, ranging in age from Early Paleocene to Late Eocene, most of which were found in the Middle Paleocene of North America. Our M1 is triangular in shape with much shorter posterior side which curves forward at middle, differing from all other viverravids.

The M1 of *Pappictidops* may become the pattern of *Orientictis* if the reduced posterior side curves forward at middle. The crest-like talonid in p4 of *Pappictidops* is a primitive character, which may change into basin-like talonid as in *Orientictis* through evolution. Thus, *Pappictidops* may be the ancestral taxon of *Orientictis*, but there is no intermediate type found at present.

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